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WATER SUPPLY OUTLOOK FOR ARIZONA



U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with

**SALT RIVER VALLEY WATER USERS ASSOCIATION
and
ARIZONA WATER COMMISSION**

AS OF
FEB. 1, 1978

Data included in this report were obtained by the agencies named above in cooperation with Federal, State and private organizations listed inside the back cover of this report.

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: SOME OF THE DATA IN THIS REPORT HAVE BEEN RECEIVED THROUGH THE SOIL CONSERVATION SERVICE'S NEW SNOTEL SYSTEM WHICH TRANSMITS INFORMATION VIA THE SPACE AGED METEOR BURST METHOD FROM DATA SITES TO MASTER STATIONS LIKE THESE.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1220 S.W. Third Ave., Portland, Oregon 97204
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W., Calgary, Alberta T3C 1A6.



WATER SUPPLY OUTLOOK FOR ARIZONA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

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PHOENIX, ARIZONA 85025



Baldy Snotel site - left to right: snow pillow, isotopic snow sensor, isotopic precipitation gage, shelter, antenna and missile precipitation gage.

ARIZONA SUMMARY
as of
FEBRUARY 1, 1978

WATER SUPPLIES ARE EXPECTED TO BE MUCH BELOW
NORMAL THIS YEAR.

STREAMFLOW WILL BE BETTER THAN LAST YEAR, BUT
GENERALLY MUCH BELOW AVERAGE.

SNOW COVER

Until late December there was no snow in Arizona. Since then, however, many light to moderate storms have occurred. Snow accumulations have been heavy along the "Rim" and on the Verde Watershed, while the White and Gila Mountains have received comparatively little. The heaviest snow occurred along the "Rim" at Promontory Butte where 37" of depth containing 12" of water was measured. Warm temperatures and rain during the last storm, however, have caused considerable melt below 7,000'.

Based on February 1 snow surveys, snow cover varies from 30% above average on the Verde Watershed to 40% below average on the Gila and Little Colorado Watersheds. Snow conditions on the Salt Watershed are good on the west side, but very low in the Mt. Baldy area, resulting in an overall average of 25% below normal.

PRECIPITATION

Except for a small area in the White Mountains, watershed precipitation was much above average during January. Amounts of 2 to 3 times normal were common and several areas received over 4 times normal for the month. Eight and a half to nine inches of precipitation fell along the "Rim" and in the Sierra Ancha Mountains, while Greer Lakes received less than an inch. Seasonal precipitation since November 1 is now about normal on the Verde and Tonto Watersheds, 30% below average on the Gila, and 40-50% below average in the White Mountains.

SOIL MOISTURE

With the heavy January storms and snowmelt, soil moisture has improved greatly. Surface soil moisture is excellent, although lower levels of the profile are still below average. Heavy precipitation in the near future will yield good runoff from the lower elevations. The higher elevations of the White Mountains, however, will require above average precipitation to produce near normal runoff.

RESERVOIR STORAGE

Water storage in central Arizona is much below average and much below that in storage last year at this time. The Salt River Project reservoirs are only one-fourth full containing one-half of average. The percent of average in some other reservoirs is as follows: San Carlos, 16; Lake Pleasant, 23; Lyman Reservoir, 45. The situation along the Colorado River is quite different. In spite of the record low runoff in 1977, storage in the Colorado River reservoirs is 42% above average.

STREAMFLOW AND WATER SUPPLIES

With the exception of the Verde River, below average runoff is expected again this year. Streamflow forecasts are predicted to be 40% of average on the Gila, 50% on the Salt, and 96% on the Verde.

Due to the poor reservoir storage and low expected runoff, water supplies will be short in most of Arizona. Only along the Colorado River will water supplies be good.

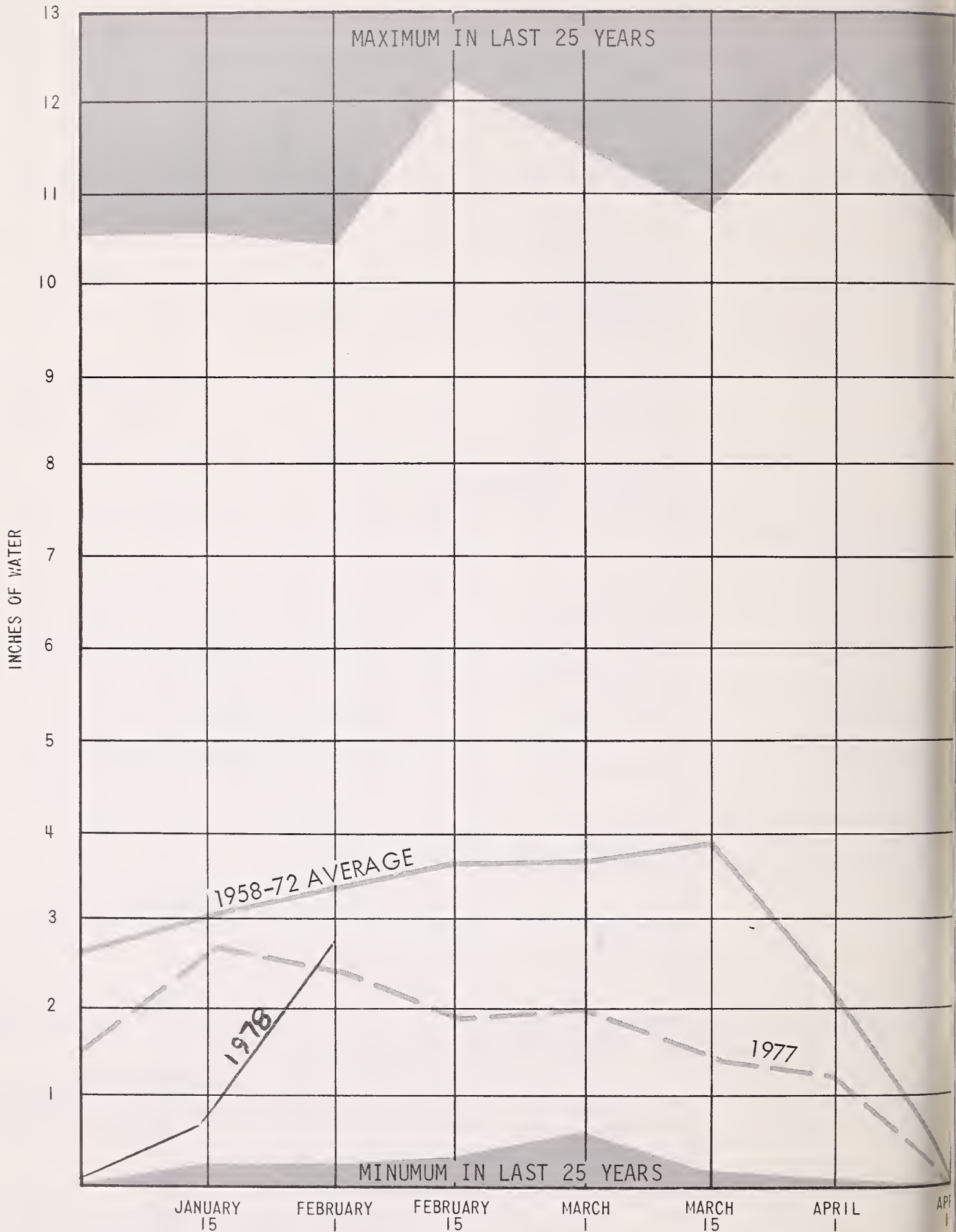
STREAMFLOW FORECASTS ABOUT FEBRUARY 1, 1978

STREAMFLOW FORECASTS		ABOUT FEBRUARY		THIS YEAR		PAST RECORD	
BASIN, STREAM and/or FORECAST POINT		FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET		
		Thousand Acre Feet	Percent of Average		Last Year	Average †	
<u>SALT RIVER DRAINAGE</u>							
Salt near Roosevelt	140	51	Feb-May	82.1	272.1		
"	20	42	February	12.0	47.5		
Tonto Creek near Roosevelt	25	79	Feb-May	6.83	31.6		
"	10	119	February	1.37	8.4		
Verde River above Horseshoe	145	96	Feb-May	52.2	150.4		
"	27	75	February	14.2	35.9		
Total Salt River Project Streams	310	68	Feb-May	141.1	454.1		
"	57	62	February	27.6	91.8		
<u>GILA RIVER DRAINAGE</u>							
Gila River at Calva	24	29	Feb-May	12.0	83.0		
Gila River near Gila	26	55	Feb-May	18.8	47.4		
Gila River near Solomon	50	40	Feb-May	24.1	125.2		
"	15	43	February	7.3	34.7		
Gila River near Virden	27	43	Feb-May	16.6	62.5		
Frisco River at Clifton	26	41	Feb-May	11.6	63.0		
Frisco River at Glenwood	10	38	Feb-May	5.1	26.5		
<u>LITTLE COLORADO RIVER DRAINAGE</u>							
Little Colo. River above Lyman Dam	2.6	25	Feb-June	1.91	10.6		
Greer 1/	4.0	57	Feb-June	3.15	7.06		
<u>GRANITE CREEK DRAINAGE</u>							
Granite Creek	4.0	--	Feb-May	--	--		
Willow Creek	1.5	--	Feb-May	--	--		
<u>MIMBRES RIVER DRAINAGE</u>							
Mimbres River near Mimbres	2.2	59	Feb-May	--	3.7		
<u>COLORADO RIVER DRAINAGE</u>							
Virgin River near Littlefield	40	93	Apr-June	17.2	43.2		
Lake Mary Inflow	4.0	90	Feb-May	--	4.45		
1/ Includes Filler Ditch Diversion							
† Based on 15-year period, 1958-72							
* Average is for less than 15 years.							

RESERVOIR STORAGE (Thousand Acre Feet) ABOUT FEBRUARY 1, 1978

Basin or Stream	RESERVOIR	Usable Capacity	Usable Storage		
			This Year	Last Year	Average†
<u>GILA RIVER DRAINAGE</u>					
Agua Fria	Lake Pleasant	157.6	13.5	32.9	59.6
Granite	Watson Lake	4.7	2.1	2.10	2.8*
Granite	Willow Creek	6.1	1.0	1.24	2.5*
Gila	San Carlos	1,073	27.6	7.7	170.9
Salt (4)	Roosevelt, Apache, Canyon & Saguaro	1,755	497.4	940.6	1,076
Verde (2)	Bartlett and Horseshoe	317.7	83.79	54.4	127.2
Salt and Verde	6 Salt River Project Reservoirs	2,073	581.2	995.0	1,203
<u>COLORADO RIVER DRAINAGE</u>					
Colorado	Lake Havasu	619.4	554.1	546.7	544.0
Colorado	Lake Mohave	1,810	1,682.3	1,675	1,676
Colorado	Lake Mead	26,159	20,974.0	21,988	17,320
Colorado	Lake Powell	25,002	14,771.0	18,017	7,290*
Little Colorado	Lyman	30.6	5.8	15.16	12.70
Little Colorado	Show Low Lake	5.1	0.5	.76	1.5
† Based on 15-year period, 1958-72					
* Average is for less than 15 years of record					

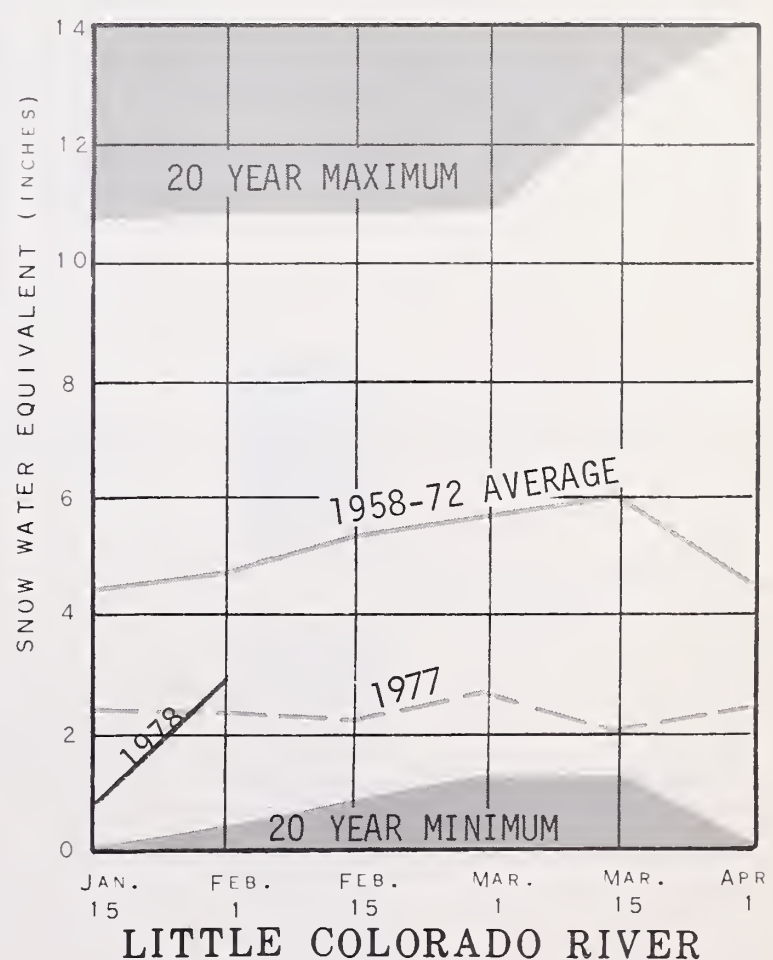
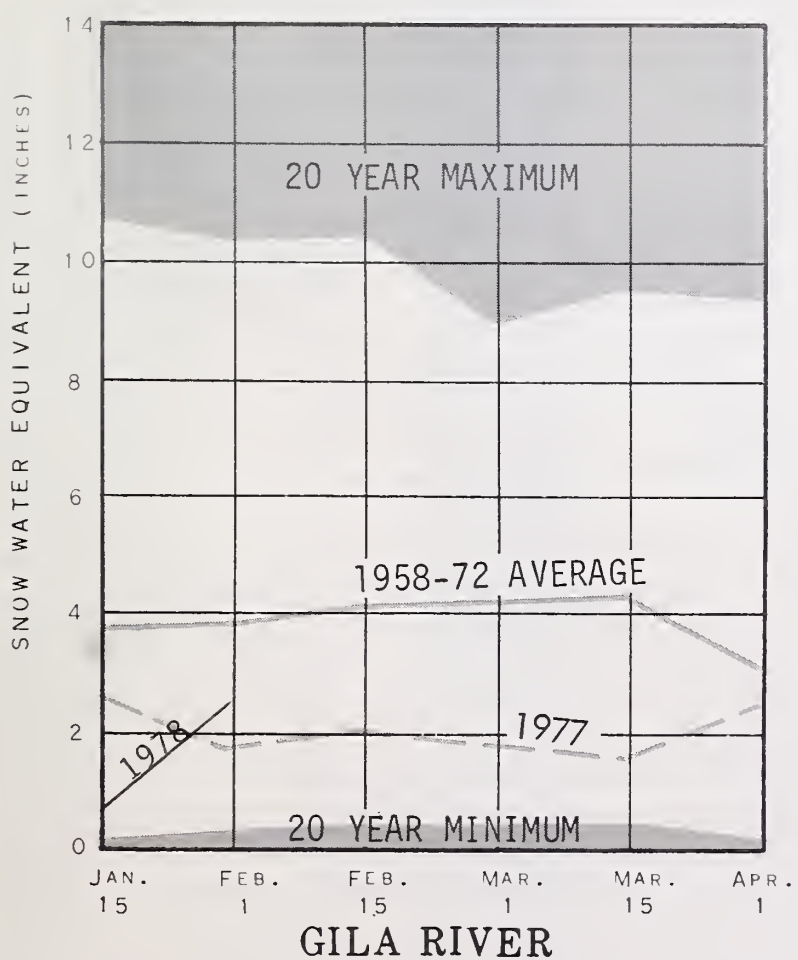
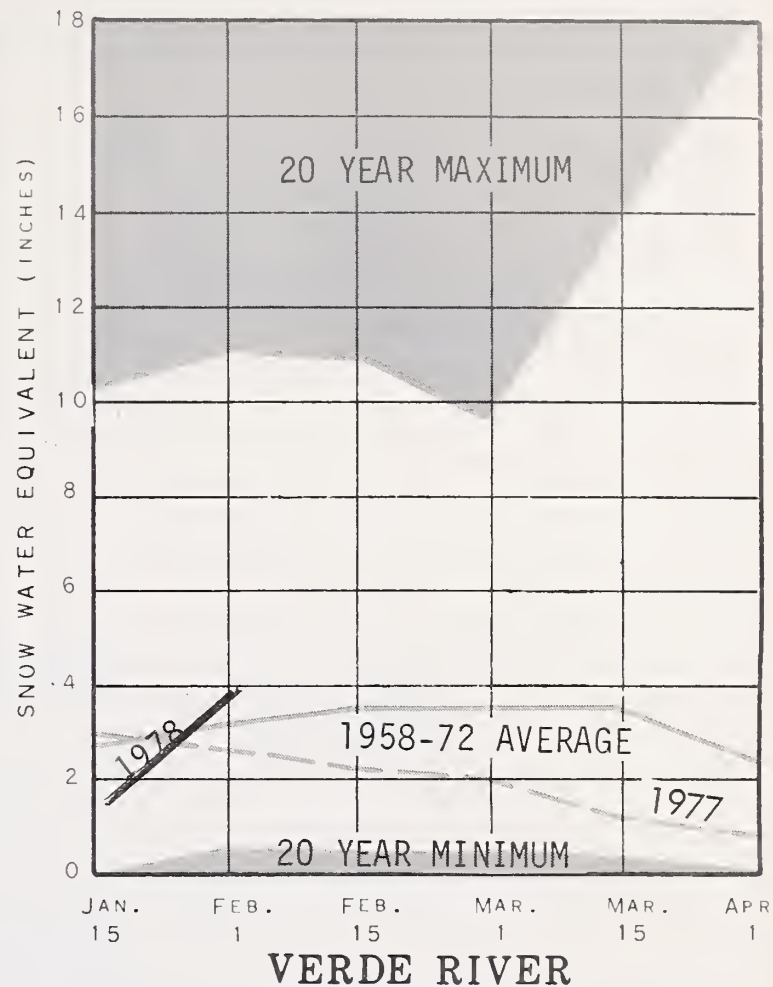
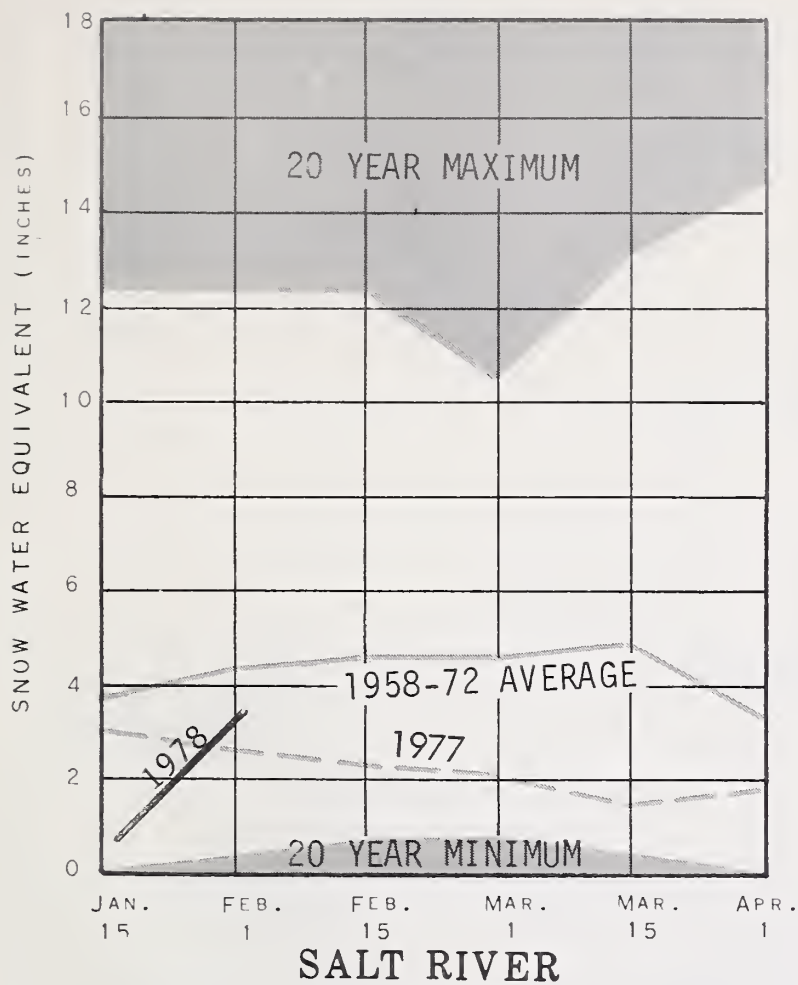
AVERAGE SNOW COVER ARIZONA 1978



This graph represents the average snow water content on eleven selected snow courses on Arizona Sub-Watersheds.

1978

WATERSHED SNOW COVER



BASED ON SELECTED SNOW SURVEY COURSES

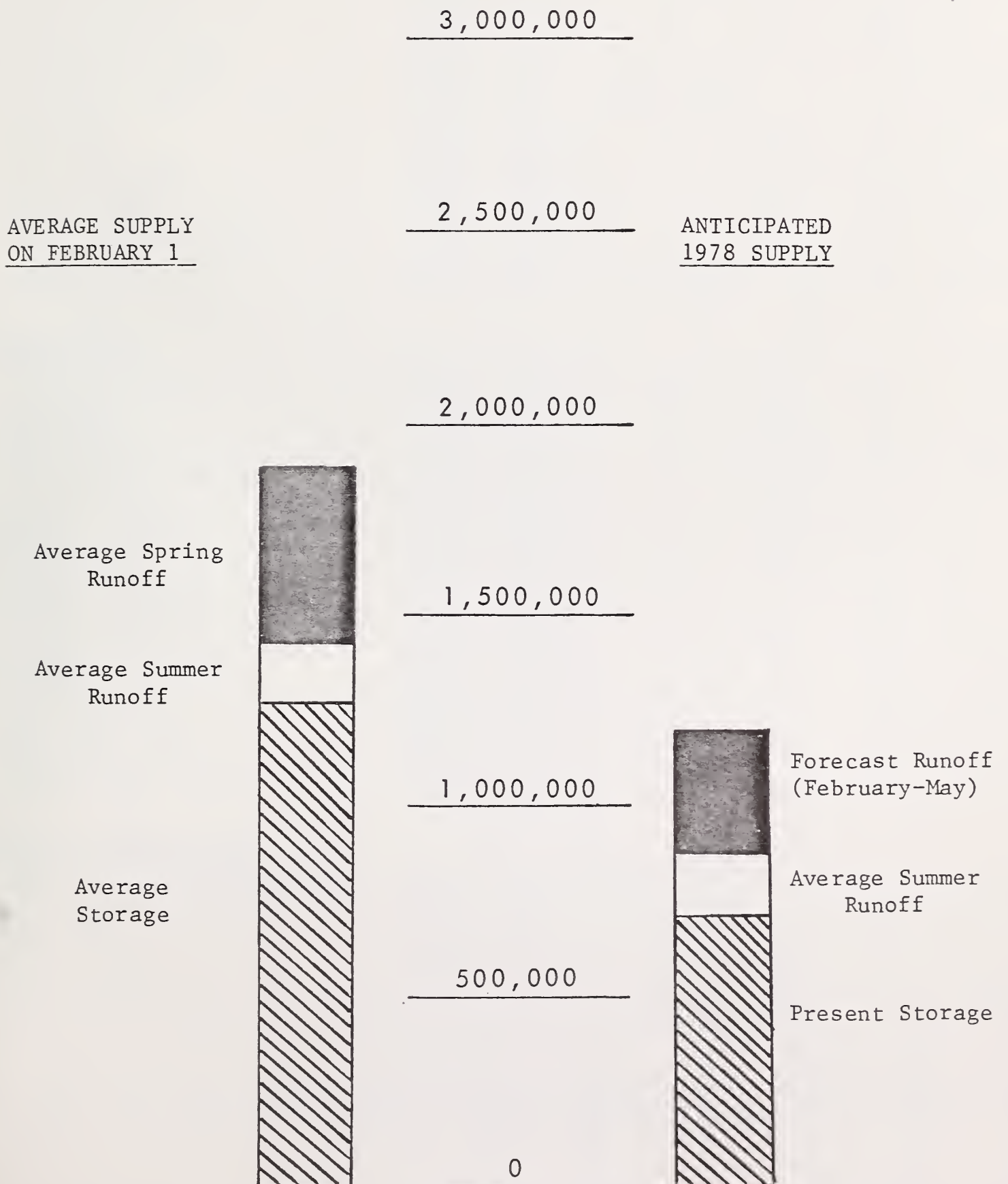
ABOUT FEBRUARY 1, 1978

+ 1958-1972 period.

WATER SUPPLY INVENTORY SALT RIVER VALLEY SYSTEM

IN ACRE-FEET

FEBRUARY 1, 1978





SNOW

ABOUT JANUARY 15, 1978

SNOW		THIS YEAR			PAST RECORD	
ABOUT JANUARY 15, 1978		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
DRAINAGE BASIN and/or SNOW COURSE					Last Year	Average †
NAME	Elevation					
GILA RIVER						
Bear Wallow	8100	1/13	7	1.3	3.6	4.0
Beaver Head	8000	1/10	0	0.0	3.2	3.0
Coronado Trail	8000	1/10	0	0.0	3.1	3.0
Emory Pass #1 *	7800	1/13	0	0.0	1.1	0.9**
Emory Pass #2 *	7800	1/13	T	0.1	1.2	2.0**
Frisco Divide	8000	1/13	T	0.0	0.9	2.5
Hannagan Meadows *	9090	1/10	5	0.8	3.5	6.5**
Hummingbird (A)	10550	N O	R E P O R T		5.3	9.1**
McKnight Cabin * (A)	9300	N O	R E P O R T		2.8	3.4**
Mogollon	7000	1/14	0	0.0	1.4	1.7
Nutriso	8500	1/10	0	0.0	1.9	2.1
Redstone Trail	8600	1/14	7	1.3	3.8	6.1**
Rose Canyon	7300	1/13	7	1.0	3.6	2.6
Silver Creek Divide	9000	1/14	9	2.0	5.0	8.8**
State Line	8000	1/13	0	0.0	1.1	2.7
Whitewater (A)	10750	N O	R E P O R T		7.6	10.9**
VERDE RIVER						
Baker Butte	7300	1/12	7	1.9	4.7	3.8**
Baker Butte #2	7700	1/12	14	3.2	5.1	---
Camp Wood	5700	1/13	0	0.0	1.1	0.7
Chalender *	7100	1/16	9	2.4	2.0	1.8
Copper Basin Divide	6720	1/13	7	1.4	3.1	2.0**
Fort Valley	7350	1/13	5	1.0	1.7	1.2
Gaddes Canyon	7600	1/13	7	1.3	3.4	3.0
Happy Jack	7630	1/13	6	0.9	3.6	2.1
Iron Springs *	6200	1/13	2	0.5	1.1	0.9
Mingus Mountain	7100	1/13	3	0.8	2.4	1.0
Mormon Lake *	7350	1/13	5	0.9	4.2	2.4
Mormon Mountain	7500	1/13	7	1.2	4.4	2.9
Newman Park	6750	1/13	5	1.1	2.8	1.6**
Snow Bowl #1	10260	1/13	18	3.5	2.6	5.3**
Snow Bowl #2	11000	1/13	27	6.0	3.7	10.0**
White Horse Lake Jct.	7150	1/13	9	1.8	3.1	2.0**
White Spar	6000	1/13	2	0.5	2.7	1.0**
LOWER COLORADO RIVER						
Bill Williams Intermediate	8550	N O	R E P O R T		3.0	4.1**
Bill Williams Summit	8950	N O	R E P O R T		3.0	5.2**
Chalender *	7100	1/16	9	2.4	2.0	1.8
Fort Valley	7350	1/13	5	1.0	1.7	1.2
Grand Canyon	7500	1/13	9	2.0	2.5	1.5
Williams Ski Run	7720	1/13	15	3.0	3.0	3.5**
+ 1958-72 15-year period. (*) Adjacent drainage. (**) 1958-72 Adjusted Average. (A) Aerial observation: Water content estimated.						

† 1958-72 15-year period. (*) Adjacent drainage. (**) 1958-72 Adjusted Average. (A) Aerial observation: Water content estimated.

SNOW ABOUT JANUARY 15, 1978

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average †
SALT RIVER						
Baldy *	9125	1/12	0	0.0	2.3	4.9
Beaver Head	8000	1/10	0	0.0	3.2	3.0
Canyon Creek	7500	1/12	6	1.4	3.7	2.8
Canyon Point	7600	1/12	7	1.5	4.1	3.0**
Coronado Trail	8000	1/10	0	0.0	3.1	3.0
Forest Dale	6430	1/13	0	0.0	2.0	1.4
Ft. Apache	9160	1/12	4	0.6	1.8	5.2
Hannagan Meadows	9090	1/10	5	0.8	3.5	6.5**
Hawley Lake	8300	1/13	4	0.6	4.4	4.3**
Heber	7600	1/13	8	1.5	3.9	2.9
Maverick Fork	9050	1/12	0	0.0	3.2	5.8
McNary	7200	1/13	1	0.1	3.1	2.1
Milk Ranch	7000	1/13	2	0.3	3.1	1.5
Mt. Ord (A)	11000	N O	R E P O R T		8.6	14.5**
Nutrioso *	8500	1/10	0	0.0	1.9	2.1
Promontory Butte	7930	1/12	15	4.1	6.8	---
Smith Cienega (A)	9850	N O	R E P O R T		6.4	---
Sunrise Summit	10600	1/12	17	3.0	5.3	---
Wilson Lake	9000	1/12	7	1.1	3.0	7.3**
Workman Creek	6900	1/17	13	4.1	4.4	4.3
LITTLE COLORADO RIVER						
Baldy	9125	1/12	0	0.0	2.3	4.9
Canyon Creek	7500	1/12	6	1.4	3.7	2.8
Canyon Point	7600	1/12	7	1.5	4.1	3.0**
Cheese Springs	8600	1/12	0	0.0	1.5	4.8**
Forest Dale	6430	1/13	0	0.0	2.0	1.4
Ft. Apache	9160	1/12	4	0.6	1.8	5.2
Fort Valley	7350	1/13	5	1.0	1.7	1.2
Happy Jack *	7630	1/13	6	0.9	3.6	2.1
Heber	7600	1/13	8	1.5	3.9	2.9
Lake Mary	6970	1/13	1	0.2	2.2	---
McNary	7200	1/13	1	0.1	3.1	2.1
Mormon Lake	7350	1/13	5	0.9	4.2	2.4
Mormon Mountain	7500	1/13	7	1.2	4.4	2.9
Nutrioso *	8500	1/10	0	0.0	1.9	2.1
Promontory Butte	7930	1/12	15	4.1	6.8	---
Snow Bowl #1	10260	1/13	18	3.5	2.6	5.3**
Snow Bowl #2	11000	1/13	27	6.0	3.7	10.0**
Wilson Lake	9000	1/12	7	1.1	3.0	7.3**

† 1958-72 15-year period. (*) Adjacent drainage. (**) 1958-72 Adjusted Average. (A) Aerial observation: Water content estimated.

SNOW ABOUT FEBRUARY 1, 1978

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average †
GILA RIVER						
Bear Wallow	8100	1/31	9	2.9	2.4	4.6
Beaver Head	8000	1/31	11	2.1	0.8	3.1
Coronado Trail	8000	1/31	14	3.2	0.6	2.9
Emory Pass #1 *	7800	1/31	1	0.2	0.6	0.3**
Emory Pass #2 *	7800	1/31	2	0.7	1.8	1.2**
Frisco Divide	8000	1/31	6	1.3	0.8	2.4
Hannagan Meadows *	9090	1/31	25	4.6	3.7	7.0**
Hummingbird (A)	10550	2/1	24	5.3	6.2	10.2**
McKnight Cabin * (A)	9300	2/1	12	3.0	3.5	3.5**
Mogollon	7000	1/30	0	0.0	0.0	1.6
Nutrioso	8500	1/31	7	1.7	0.4	2.1
Redstone Trail	8600	1/30	15	3.5	3.8	6.6**
Rose Canyon	7300	1/31	4	1.1	3.4	2.9
Silver Creek Divide	9000	1/30	18	4.6	5.8	9.5**
State Line	8000	1/31	13	2.5	0.4	2.6
Whitewater (A)	10750	2/1	48	9.6	8.6	12.7**
VERDE RIVER						
Baker Butte	7300	2/1	14	4.8	4.5	4.9**
Baker Butte #2	7700	2/1	30	9.3	5.8	---
Camp Wood	5700	1/31	0	0.0	T	0.6
Chalender *	7100	1/31	11	3.3	1.9	2.1
Copper Basin Divide	6720	1/31	7	2.3	1.9	1.6**
Fort Valley	7350	2/1	12	3.0	1.7	1.6
Gaddes Canyon	7600	1/31	17	4.3	2.7	3.5
Happy Jack	7630	1/31	15	4.2	4.3	2.4
Iron Springs *	6200	1/31	0	0.0	0.0	0.8
Mingus Mountain	7100	1/31	5	1.3	0.7	1.0
Mormon Lake *	7350	1/31	14	4.2	4.2	3.0
Mormon Mountain	7500	1/31	17	5.1	4.5	3.6
Newman Park	6750	1/31	11	4.0	1.9	1.6**
Snow Bowl #1	10260	1/30	26	6.8	2.6	7.3**
Snow Bowl #2	11000	1/30	39	10.2	4.1	12.5**
White Horse Lake Jct.	7150	1/31	15	4.9	2.8	2.5**
White Spar	6000	1/31	0	0.0	0.0	0.7**
LOWER COLORADO RIVER						
Bill Williams Intermediate	8550	1/31	32	9.2	2.8	6.1**
Bill Williams Summit	8950	1/31	34	9.4	3.0	7.6**
Chalender *	7100	1/31	11	3.3	1.9	2.1
Fort Valley	7350	2/1	12	3.0	1.7	1.6
Grand Canyon	7500	1/31	19	4.4	1.1	1.6
Williams Ski Run	7720	1/31	26	7.2	3.3	4.7**

† 1958-72 15-year period. (*) Adjacent drainage. (**) 1958-72 Adjusted Average. (A) Aerial observation: water content estimated.

SNOW ABOUT FEBRUARY 1, 1978

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average †
<u>SALT RIVER</u>						
Baldy *	9125	1/30	9	1.9	2.6	5.7
Beaver Head	8000	1/31	11	2.1	0.8	3.1
Canyon Creek	7500	1/31	15	4.7	3.4	3.1
Canyon Point	7600	1/31	17	6.0	4.7	3.3**
Coronado Trail	8000	1/31	14	3.2	0.6	2.9
Forest Dale	6430	1/31	0	0.0	1.8	1.1
Ft. Apache	9160	1/30	10	2.3	2.1	6.0
Hannagan Meadows	9090	1/31	25	4.6	3.7	7.0**
Hawley Lake	8300	1/31	18	4.5	5.0	5.8**
Heber	7600	1/31	16	5.1	3.9	3.2
Maverick Fork	9050	1/30	13	3.2	4.0	6.9
McNary	7200	1/31	7	1.8	3.1	2.1
Milk Ranch	7000	1/31	4	1.3	2.0	1.5
Mt. Ord (A)	11000	N O	R E P O R T		9.2	17.0**
Nutriosos *	8500	1/31	7	1.7	0.4	2.1
Promontory Butte	7930	1/31	37	12.2	8.3	---
Smith Cienega (A)	9850	N O	R E P O R T		7.0	---
Sunrise Summit	10600	1/31	27	5.3	6.0	---
Wilson Lake	9000	1/31	19	4.2	3.6	7.8**
Workman Creek	6900	1/31	13	4.3	4.2	4.9
<u>LITTLE COLORADO RIVER</u>						
Baldy	9125	1/30	9	1.9	2.6	5.7
Canyon Creek	7500	1/31	15	4.7	3.4	3.1
Canyon Point	7600	1/31	17	6.0	4.7	3.3**
Cheese Springs	8600	1/31	11	2.4	2.0	5.6**
Forest Dale	6430	1/31	0	0.0	1.8	1.1
Ft. Apache	9160	1/30	10	2.3	2.1	6.0
Fort Valley	7350	2/1	12	3.0	1.7	1.6
Happy Jack *	7630	1/31	15	4.2	4.3	2.4
Heber	7600	1/31	16	5.1	3.9	3.2
Lake Mary	6970	1/31	5	1.6	2.4	---
McNary	7200	1/31	7	1.8	3.1	2.1
Mormon Lake	7350	1/31	14	4.2	4.2	3.0
Mormon Mountain	7500	1/31	17	5.1	4.5	3.6
Nutriosos *	8500	1/31	7	1.7	0.4	2.1
Promontory Butte	7930	1/31	37	12.2	8.3	---
Snow Bowl #1	10260	1/30	26	6.8	2.6	7.3**
Snow Bowl #2	11000	1/30	39	10.2	4.1	12.5**
Wilson Lake	9000	1/31	19	4.2	3.6	7.8**

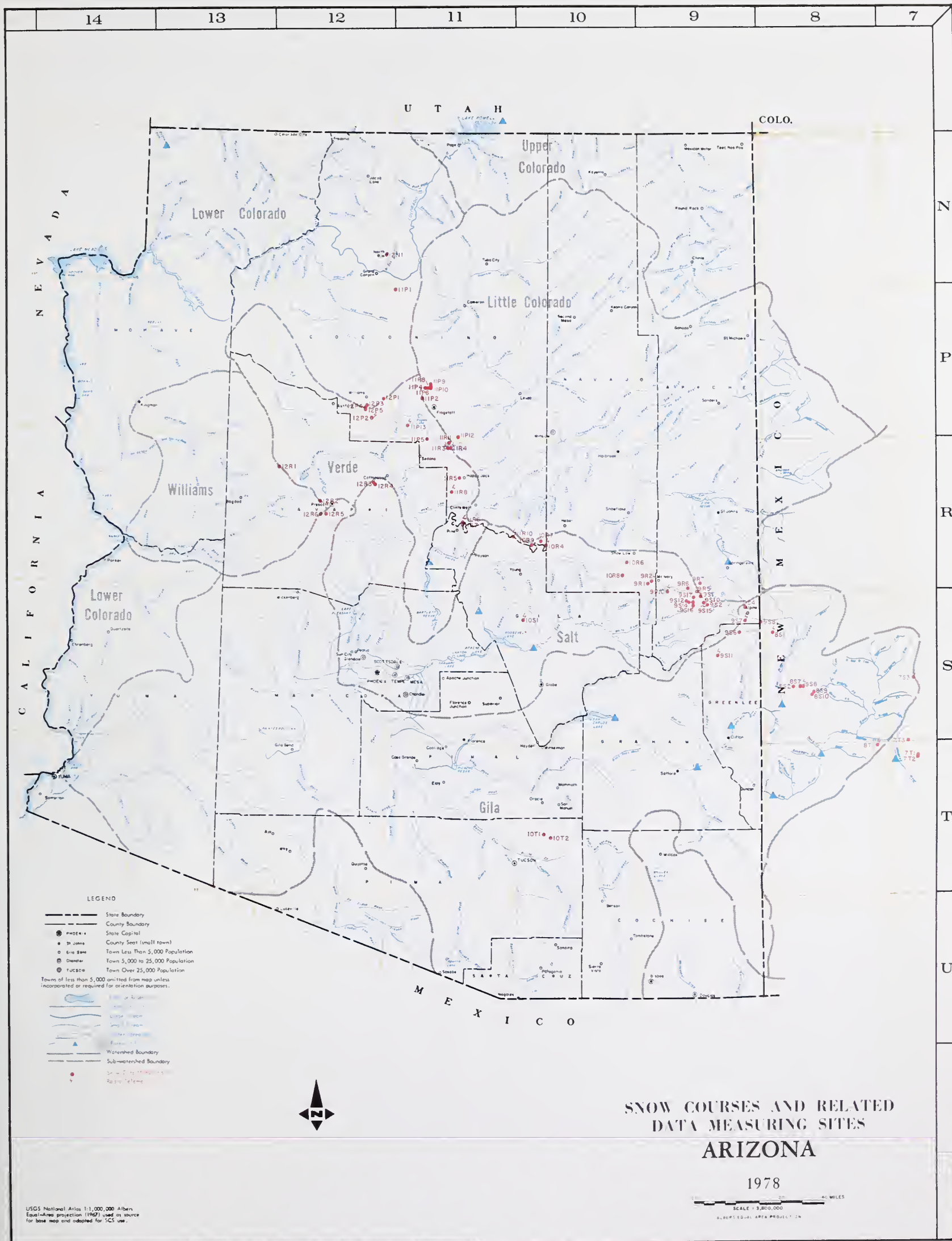
† 1958-72 15-year period. (*) Adjacent drainage. (**) 1958-72 Adjusted Average. (A) Aerial observation: water content estimated.

PRECIPITATION (Inches) ABOUT FEBRUARY 1, 1978

DRAINAGE BASIN and PRECIPITATION GAGE LOCATION	ELEVATION	CURRENT INFORMATION			FROM APPROX. NOV. 1 TO DATE		
		Date of Reading	Month's Precipitation	Average †	This Year	Average †	Percent of Average
<u>GILA RIVER</u>							
Silver Creek Divide	9000	1/30	5.00	1.67*	7.08	9.66*	73
Hannagan Meadows **	9030	1/31	4.76	2.13	5.82	8.50	68
Frisco Divide **	8000	1/31	1.97	---	3.07	---	--
<u>SALT RIVER</u>							
Canyon Point	7600	1/31	8.45	2.72*	10.15	10.98*	92
Hannagan Meadows **	9030	1/31	4.76	2.13	5.82	8.50	68
Little Wildcat (Heber Snow Course)	7600	1/31	8.20	2.43	9.95	9.34	107
Maverick Fork	9050	1/30	3.32	2.03	4.90	7.95	62
Workman Creek **	6970	1/31	9.46	3.34	11.27	11.46	98
Wilson Lake	9100	1/31	2.10	2.52*	3.63	8.18*	44
<u>VERDE RIVER</u>							
Baker Butte	7300	2/1	7.24	3.02*	9.21	11.09*	83
Copper Basin Divide	6720	1/31	7.05	1.50*	8.25	6.78*	122
Fort Valley **	7350	2/1	3.36	1.40	5.34	5.42	99
Happy Jack **	7480	1/31	4.89	1.90	7.15	6.88	104
Mingus Mountain	7660	1/31	5.49	1.40	6.99	5.56	126
Mormon Mountain	7500	1/31	7.40	2.23*	9.90	10.17*	97
White Horse Lake Jct.**	7150	1/31	7.10	---	10.15	---	--
<u>LITTLE COLORADO</u>							
Inner Basin #1	9830	--	--	2.06	--	10.19	--
Inner Basin #2	10050	--	--	2.49*	--	11.85*	--
Greer Lakes	8500	1/30	.87	.98	1.97	4.30	46
Little Wildcat (Heber Snow Course)	7600	1/31	8.20	2.43	9.95	9.34	107
Sheep Crossing (Baldy Snow Course)	9125	1/30	2.03	2.29	3.68	7.75	47
† 1958-72 Average * Adjusted Average ** Data Supplied by U.S. Forest Service							

SOIL MOISTURE ABOUT FEBRUARY 1, 1978

DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average †
<u>GILA RIVER</u>							
Frisko Divide	8000	48	13.3	1/31	6.4	6.3	9.3
<u>SALT RIVER</u>							
Black River Divide	9100	48	16.8	1/30	14.2	16.7	16.3
Canyon Creek	7500	48	18.3	1/31	13.6	13.8	15.8
Corduroy Creek	6000	36	13.5	1/28	7.1	7.5	9.1
McNary	7200	48	16.3	1/28	14.0	14.0	15.0
<u>VERDE RIVER</u>							
Mormon Mountain	7500	48	16.1	1/31	14.2	13.8	15.5
Newman Park	6750	48	17.7	1/31	14.9	11.2	17.2
† 1958-72 15-year average							



INDEX to SNOW COURSES and SOIL MOISTURE STATIONS

NUMBER	NAME	SEC.	TWP.	RGE.	ELEV.	DRAINAGE	OBSERVER	RECORD BEGAN
11P10A	Agassiz	32	23N	7E	11200	Little Colorado	SCS-CF*	1968
11R7	Baker Butte #2	9	12N	9E	7700	Verde	SCS	1971
11R6PSPRT	Baker Butte	4	12N	9E	7300	Verde	SCS	1966
9S1APSPRT	Caldy	28	7N	27E	9125	Little Colorado	SCS	1950
9S15	Baldy #2	12	6N	26E	9750	Little Colorado	SCS	1963
9S16	Baldy #3	13	6N	26E	10950	Little Colorado	SCS	1963
10T1	Bear Wallow	6	12S	16E	8100	Gila	FS	1948
9S6	Beaver Head	13	4N	30E	8000	San Francisco	FS	1938
12P5	Bill Williams Intermediate	17	21N	2E	8550	Cataract	FS	1967
12P4	Bill Williams Summit	17	21N	2E	8950	Verde	FS	1967
9S10m	Black River Divide	10	6N	27E	9400	Salt	SCS	1954
12N1	Bright Angel	34	33N	3E	8400	Bright Angel Creek	NPS	1947
12R1	Camp Wood	3	16N	6W	5700	Verde	FS	1946
10R7M	Canyon Creek #2	18	11N	15E	7500	Little Colorado	SCS	1958
10R9P	Canyon Point	28	11N	14E	7600	Salt	SCS	1967
12P1M	Chalender	27	22N	3E	7100	Verde	FS	1947
9R7	Cheese Springs	28	8N	27E	8600	Little Colorado	SCS	1969
12R6P	Copper Basin Divide	23	13N	3W	6720	Verde	SCS	1963
10R8m	Corduroy Creek	4	8N	21E	6000	Salt	SCS	1954
9S7PSPRT	Coronado Trail	26	5N	30E	8000	San Francisco	FS	1938
7T1	Emory Pass #1	16	16S	9W**	7800	Mimbres	SCS	1967
7T2	Emory Pass #2	16	16S	9W**	7800	Mimbres	SCS	1967
11P13PSPRT	Fry	35	20N	5E	7220	Verde	SCS	1978
10R6	Forest Dale	2	9N	21E	6430	Salt	BIA	1939
9R5	Ft. Apache	18	7N	27E	9160	Little Colorado	SCS	1951
11P2P	Ft. Valley	22	22N	6E	7350	Little Colorado	FS	1947
8S1MPSPRT	Frisco Divide	31	6S	20W**	8000	San Francisco	FS	1938
12R4	Gaddes Canyon	11	15N	2E	7600	Verde	SCS	1954
11P1	Grand Canyon	21	30N	4E	7500	Hance Creek	NPS	1947
9S11PSPRT	Hannagan Meadows	19	3N	29E	9090	San Francisco	FS	1964
11R5P	Happy Jack	30	16N	9E	7630	Verde	FS	1951
9R10PSPRT	Hawley Lake	13	7N	24E	8300	Salt	BIA	1966
10R4PSPRT	Heber	28	11N	15E	7600	Little Colorado	SCS	1950
8S9A	Hummingbird	19	11S	17W**	10550	Gila	SCS	1964
11P9P	Inner Basin #1	28	23N	7E	10000	Little Colorado	SCS	1967
11P8P	Inner Basin #2	28	23N	7E	9750	Little Colorado	SCS	1967
12R2	Iron Springs	22	14N	3W	6200	Little Colorado	SCS	1946
11P12	Lake Mary	21	19N	9E	6930	Little Colorado	SCS	1975
7S3PSPRT	Lookout Mountain	1	10S	10W	8500	Gila	SCS	1978
9S2APSPRT	Maverick Fork	13	6N	27E	9150	Salt	SCS	1950
7S3A	McKnight Cabin	10	15S	10W**	9300	Mimbres	SCS	1967
9R2MPSPRT	McNary	23	8N	23E	7200	Salt	BIA	1939
9R1	Milk Ranch	33	8N	23E	7000	Salt	BIA	1941
12R3	Mingus Mountain	3	15N	2E	7100	Verde	SCS	1947
8S2	Mogollon	2	11S	19W**	7000	San Francisco	SCS	1953
11R4	Mormon Lake	13	18N	8E	7350	Little Colorado	SCS	1947
11R3MAPSPRT	Mormon Mountain	14	18N	8E	7500	Verde	SCS	1950
11R11	Mormon Mountain Summit	2	18N	8E	8470	Little Colorado	SCS	1975
9S12A	Mt. Ord	4	6N	26E	11200	Salt	SRP-SCS	1966
11P5M	Newman Park	25	19N	6E	6750	Verde	SCS	1963
9S4	Nutrioso	23	6N	30E	8500	San Francisco	FS	1938
11R10PSPRT	Promontory Butte	5	11N	13E	7930	Little Colorado	SCS	1973
8S7	Redstone Trail	5	11S	18W**	8600	San Francisco	SCS	1961
10T2	Rose Canyon	15	12S	16E	7300	Gila	FS	1948
8T1PSPRT	Signal Peak	13	16S	13W	8360	Gila	SCS	1977
8S8PSPRT	Silver Creek Divide	4	11S	18W**	9000	San Francisco	SCS	1964
9S14A	Smith Cienega	10	6N	26E	10050	Salt	SRP-SCS	1966
11P4	Snow Bowl #1	36	23N	6E	10260	Verde	FS	1961
11P6	Snow Bowl #2	31	23N	7E	11000	Verde	FS	1965
9S8	State Line	6	6S	21W**	8000	San Francisco	FS	1938
9S17	Sunrise Summit	36	7N	26E	10600	Salt	SCS	1972
11R8PSPRT	Sugarloaf	8	8E	14N	6120	Verde	SCS	1978
12P2P	White Horse Lake Jct.	2	20N	2E	7180	Verde	FS	1967
12R5	White Spar	19	13N	2W	6000	Verde	SCS	1963
8S10A	Whitewater	19	11S	17W**	10750	Gila	SCS	1964
12P3	Williams Ski Run	9	21N	2E	7720	Cataract	FS	1967
9R6P	Wilson Lake	4	7N	26E	9000	Salt	SCS	1966
10S1PSPRT	Workman Creek	33	6N	14E	6900	Salt	FS	1952

A Aerial Snow Depth Marker
M Soil Moisture Station
m Soil Moisture Station Only
P Precipitation Storage Gage
R Radio Telemetry

SP Snow Pressure Pillow
T Temperature
** NM Principal Meridian
* City of Flagstaff

The Following Organizations Cooperate in the Arizona Snow Survey Work

FEDERAL

- Department of Agriculture
 - Soil Conservation Service
 - Forest Service
 - Apache-Sitgreaves Forest
 - Coconino Forest
 - Coronado Forest
 - Gila Forest
 - Kaibab Forest
 - Prescott Forest
 - Rocky Mountain Forest and Range Experiment Station
 - Tonto Forest
- Department of Commerce
 - NOAA, National Weather Service
- Department of Interior
 - Bureau of Reclamation
 - Region 111
 - Geological Survey
 - Arizona District
 - New Mexico District
 - Bureau of Indian Affairs
 - Fort Apache Reservation
 - San Carlos Irrigation Project
 - National Park Service
 - Grand Canyon National Park
- Gila Water Commissioner
 - Safford, Arizona

STATE

- Arizona Game and Fish Department
- Arizona State Parks Board
- Arizona Water Commission
- University of Arizona
 - Arizona Agricultural Experiment Station
 - Water Resource Research Center
 - Department of Watershed Management

MUNICIPAL

- City of Flagstaff

IRRIGATION PROJECTS

- Salt River Valley Water User's Association
 - Phoenix, Arizona
- San Carlos Irrigation and Drainage District
 - Coolidge, Arizona
- Maricopa County Municipal Water Conservation District

PRIVATE

- Southwest Forest Industries, Inc.
 - McNary, Arizona
- Fort Apache Indian Reservation
 - White Mountain Recreation Enterprises

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

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